

# Technology Innovation Project



*Project Brief*

## TIP 266: EWEB/Metropolitan Wastewater Management Commission (MWMC) Demand Response Pilot

### Context

A major part of BPA's efforts to achieve more efficient system response, as well as its mandated conservation investment, is to explore nonwire solutions to achieve system balance and energy savings. Measurement and verification of demand response (DR) events will provide a performance-based approach in developing reliable resources that can be used year-round for ancillary services.

This demand response pilot is an opportunity to explore how alternate operational strategies, combined with a new aeration blower and several pump stations, can provide a dispatch resource that can help shape the electric system load and, as markets evolve, reduce the plant's electric bill.

### Description

The DR Demonstration Project will demonstrate that the MWMC facility can act as a dispatchable large utility-scale DR resource (>1 MW) to both increase load (DECs) when there is extra capacity on the grid and decrease load (INCs) during peak periods, capacity constraints, grid emergencies or during periods when renewable resources experience intermittency.

At this time, it is envisioned that a demand response event will be triggered by a phone call to a designated operator. The operator will attempt to ramp down (or up) the aeration blower and/or pump stations for a set duration.

Future scenarios will strive to expand demand response objectives. This may include shortening response time, increasing response duration, developing seasonal strategies, or other attributes as determined by the team and as lessons learned dictate. Plant SCADA control of equipment is extensive and additional load shedding opportunities can be integrated into request / response structure.

If initial phases prove successful, it may be desirable to move toward a more automated DR approach.

### Why It Matters

This demand response pilot is an opportunity to explore how wastewater treatment plant alternate operational strategies combined with a system-by-system approach can provide a dispatch resource that can help shape the electric system load and, as markets evolve, reduce the electric bill.

Additionally, this pilot exemplifies the synergy between demand response and energy efficiency (saving up to 2,000,000 kWh) through a single investment at a cost significantly less than pumped storage or new generation.

### Goals and Objectives

This project will explore demand response scenarios that may address the following needs:

- **Utility peak shifting:** Responding to a day-ahead request to decrease load, up to four hours in duration.
- **Balancing reserves:** Increase or decrease load within ten minutes, up to ninety minutes in duration.
- **Transmission investment deferral:** Increase or decrease load within ten minutes, up to four hours in duration.
- **Overgeneration events:** Increase load during Light Load Hours (LLH).
- **Energy Efficiency and Demand Response Synergies:** Leverage both demand response flexibility and energy efficiency in with a single investment.

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**Project Start Date:** October 1, 2012

**Project End Date:** September 30, 2014

### Reports & References (Optional)

### Links (Optional)

### Participating Organizations

Eugene Water and Electric Board  
Metropolitan Wastewater Management Commission

### Funding

Total Project Cost:	\$1,561,180
BPA Share:	\$ 70,000
External Share:	\$1,491,180
BPA FY2013 Budget:	\$35,000

### For More Information Contact:

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